

<p>1. A method of sorting paper, comprising:</p> <p>(a) conveying the paper through an inspection zone;</p>	<p>Page 2, line 13: "The present invention discloses a paper sorting system..."</p> <p>Page 5, lines 2-7: "Referring now to Fig. 1 there shown generally at 10, the multi-grade object sorting system and method of the present invention. Fig. 1 shows the preferred embodiment in which transmitter or first light array 12 transmits light along transmitted light pathway 26 into mirror 16 which then redirects the transmitted light along redirected transmitted light path 28 onto object 100 which is preferably paper."</p> <p>Also, see conveyor belt 20, discussed at page 5, line 2 – page 6, line 18.</p> <p>The location of the object 100 as seen in Fig. 1 is the inspection zone, and the conveyor 20 conveys the paper through the inspection zone.</p>
<p>(b) analyzing at least the following three characteristics of the paper passing through the inspection zone:</p> <p>(1) the color of the paper;</p>	<p>Page 8, lines 7-9: "The sensor and receiver layout shown in Fig. 1 senses paper by grade and by <u>color</u>..."</p> <p>Details of the color determination are explained at page 9, line 3 – page 13, line 17.</p>
<p>(2) whether the paper is glossy; and</p>	<p>Page 8, lines 5-7: "Referring now to Fig. 5, there is shown another aspect of the multi-grade object sorting system and method of the present invention. In this particular drawing, the surface <u>gloss detection</u> system and method 150 is shown."</p> <p>Details of the gloss determination are explained at page 8, line 5 – page 13,</p>

	line 17.
(3) whether the paper displays printed material; and	<p>Page 11, lines 16-21: "The intensity derivative will provide a measure of the amount that the intensity varies from point to point on the object. For example, a piece of white paper has an intensity derivative of zero whereas <u>a sheet of paper with printing</u> will have a higher intensity derivative because the intensity changes from point to point based upon the various spaces with or without ink."</p> <p>Details of the color determination are explained at page 9, line 3 – page 13, line 17.</p>
(c) sorting the paper based upon at least one of the characteristics analyzed in step (b).	<p>Page 1, lines 11-13: "The present invention relates generally to a multi-grade object sorting system and method and more particularly to a system for sorting various grades and colors of paper."</p> <p>Page 12, lines 14-18: "The masks from steps 208, 210, 214, 218, 222, and 226 are then combined in step 228 using a Boolean function in such a way that if all readings from steps 208, 210, 214, 218, 222, and 226 are 1's, then ejection step 230 occurs. Otherwise no ejection occurs in non-ejection step 232."</p> <p>See Fig. 7 for ejection step 230 and non-ejection step 232.</p>
12. An apparatus for sorting paper, comprising: a conveyor for conveying paper through an inspection zone;	See support above for element (a) of claim 1.
a light source for transmitting light onto paper in the inspection zone;	Page 5, lines 3-7: "Fig. 1 shows the preferred embodiment in which

	transmitter or first light array 12 transmits light along transmitted light pathway 26 into mirror 16 which then redirects the transmitted light along redirected transmitted light path 28 onto object 100 which is preferably paper.”
a sensor for receiving light reflected from the paper in the inspection zone;	<p>Page 5, lines 7-9: “The light reflected from object 100 travels along reflected light path 30 onto mirror 16 which then redirects the reflected light along redirected reflected light path 32 into receiver 14.”</p> <p>Page 7, lines -16: “Referring now to Fig. 4, there is shown generally at 64 a cutaway view of the lens/photo diode pair of the present invention. As can be seen in Fig. 4, lens 66 receives light from system and method 10 (not shown) and directs it onto photo diode or what can be referred to as photo diode sensor 68.”</p>
a paper analysis system, operably connected to the sensor for receiving the reflected light signals therefrom, the system including a color determination component, a glossiness determination component, and a printed matter determination component; and	See support for elements b(1) – b(3) of claim 1 above.
a sorting mechanism including a select path and a reject path, the sorting mechanism being operably connected to the paper analysis system for sorting paper in response to the analysis conducted by the paper analysis system.	<p>See support for element (c) of claim 1 above.</p> <p>The actual sorting mechanism is an array of air jets which are illustrated in Fig. 10.</p>
24. A high speed method of sorting paper, comprising: (a) conveying the paper	Page 3, lines 11-12: “Another object of the present invention is to allow the system and method to operate at high

through an inspection zone at a speed of at least 1,000 feet per minute;	rates of speed.”
(b) analyzing at least one characteristic of the paper passing through the inspection zone, the at least one characteristic being selected from the group consisting of color, glossiness and the presence of printed matter; and	See support for elements b(1) – b(3) of claim 1 above.
(c) sorting the paper downstream of the inspection zone based upon the analysis of step (b).	See support for element (c) of claim 1 above.
31. A method of sorting paper, comprising: (a) moving the paper through an inspection zone;	See support above for element (a) of claim 1.
(b) exposing the paper in the inspection zone to a plurality of separate beams of visible light of different wavelengths;	Page 7, lines 3-5: “In the preferred embodiment, transmitting array 52 consists of a row of infrared LED’s 56, a row of red LED’s 58, a row of green LED’s 60 and a row of blue LED’s 62. “
(c) analyzing a color of the paper based upon a comparison of the paper’s reflectivity of the different wavelengths of visible light; and	Details of the use of different color light sources to make the color determination of the paper are explained at page 9, line 3 – page 13, line 17.
(d) sorting the paper downstream of the inspection zone based upon the color of the paper.	See support for element (c) of claim 1 above.

Thus, the present application has the same effective filing date as the Khalfan patent. Accordingly, Khalfan is not properly citable as prior art against the present application. Since Khalfan is an essential part of each of the Examiner's grounds of rejection, all of those rejections are inappropriate. Accordingly, it is submitted that rejected claims 1-42 should be allowed, in addition to claims 43-65 and 84-88 previously allowed.

Respectfully submitted,



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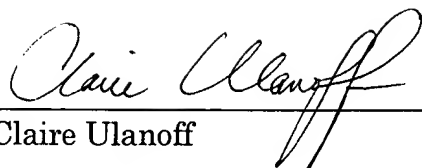
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Claire Ulanoff

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